

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A method for facilitating parsing XML data, the method comprising:  
creating a parsing function;  
mapping an XML element to the parsing function;  
exposing the mapping to an agent via a communication channel;  
receiving an event for the element from an event-based reader of XML data containing the element;  
pre-parsing the content of the element using a state machine automatically generated by the agent in accordance with the exposed mapping; and  
sending the pre-parsed content of the element via the communication channel to the parsing function.

2. The method of Claim 1, wherein the parsing function is a member of a user class library, and mapping the XML element to the parsing function includes creating a parsing map describing the XML element and identifying the class member associated with the XML element.

3. The method of Claim 2, wherein sending the pre-parsed content of the mapped XML element via the communication channel to the parsing function includes looking up the class member identified as being associated with the XML element, and sending the pre-parsed content of the XML element to the associated class member.

4. The method of Claim 2, wherein the parsing function is a reusable object to which the XML element has been previously mapped, and mapping the XML element to the parsing function includes:

creating the parsing map describing the XML element and identifying the reusable object associated with the XML element; and

joining the reusable object to the other parsing functions described in the parsing map.

5. The method of Claim 1, wherein the agent is an implementation class member and the communication channel is an interface to the implementation class member that enables the mapping to be exposed to the agent automatically.

6. The method of Claim 1, wherein the event-based reader of XML data is a SAX reader, and receiving the event for the mapped XML element includes selecting from a plurality of events that have been pushed by the SAX reader only those events that are associated with the mapped XML element.

7. The method of Claim 1, wherein pre-parsing the content of the XML element includes at least one of verifying a structure of the XML element relative to other XML elements occurring in the XML data, verifying a consistency of the XML element, extracting an attribute of the XML element, and collecting a content of the XML element.

8. The method of Claim 1, further comprising:  
mapping an XML element that was previously mapped to an existing parsing function;  
joining the existing parsing function to the created parsing function;  
sending the pre-parsed content of the mapped XML element via the communication channel to the joined parsing functions.

9. A system for parsing XML data, the system comprising:  
a library of custom parsing functions to parse content of XML elements;  
a parser having a map that associates custom parsing functions with XML elements;  
a communication channel;  
an agent that obtains the content of an XML element on behalf of the parser in accordance with the map, wherein the map is accessed via the communication channel, and further where the agent passes the content to the associated custom parsing function via the communication channel.

10. The system of Claim 9, wherein the library of custom parsing functions is a class library of members that receive content from the agent via the communication channel.

11. The system of Claim 10, wherein the map associates custom parsing functions with XML elements by associating a member name to an XML element name.

12. The system of Claim 9, wherein at least one of the parsing functions is a reusable object to which an XML element has been previously associated, and the parser joins the reusable object to the other parsing functions in the map.

13. The system of Claim 9, wherein the agent is an implementation class member and the communication channel is an interface to the implementation class member that enables the agent to access the map automatically.

14. The system of Claim 9, further comprising an event-based reader, wherein the agent obtains the content of the XML element on behalf of the parser, including handling events generated for the XML element by the event-based reader.

15. The system of Claim 14, wherein the event-based reader of XML data is a SAX reader, and handling events generated for the XML element includes at least one of verifying a structure of the XML element relative to other XML elements occurring in the XML data, verifying a consistency of the XML element, extracting an attribute of the XML element, and collecting the content of the XML element.

16. The system of Claim 9, wherein the agent obtains the content of the XML element on behalf of the parser using a state machine generated in accordance with the map.

17. A computer-accessible medium having components for parsing XML data, the medium comprising instructions to:

associate an XML element with a parsing function;

expose the association to an agent via a communication channel;

activate the agent to process events for the XML element using the exposed association, the events being generated by an event-based interface to an XML data source containing the XML element;

send a content of the XML element to the associated parsing function via the communication channel; and

apply the parsing function to the content.

18. The computer-accessible medium of Claim 17, wherein the parsing function is a member of a user class library, and the instruction to associate an XML element with the parsing function includes an instruction to create a map that defines the XML element by element name, and describes the parsing function by the function's user class library member name.

19. The computer-accessible medium of Claim 17, wherein the instruction to activate the agent includes an instruction to register the agent with the event-based interface to the XML data source that contains the XML element in the exposed association.

20. The computer-accessible medium of Claim 17, wherein the instruction to activate the agent to process events for the XML element using the exposed association includes an instruction to generate a state table algorithm corresponding to the exposed association, where the agent processes the events using the state table algorithm.

21. The computer-accessible medium of Claim 17, wherein the instruction to activate the agent to process events for the XML element using the exposed association includes an instruction to perform at least one of verifying a structure of the XML element relative to other XML elements occurring in the XML data source, verifying a consistency of the XML element, extracting an attribute of the XML element, and collecting a content of the XML element.

22. The computer-accessible medium of Claim 17, wherein the instruction to send a content of the XML element to the associated parsing function via the communication channel includes an instruction to invoke the parsing function with the content of the XML element using a callback method.

23. The computer-accessible medium of Claim 17, wherein the parsing function includes a reusable object with which the XML element has been previously associated, and

the instructions further comprise an instruction to join the reusable object to the parsing function.

24. The computer-accessible medium of Claim 17, wherein the agent is a member of an implementation class library and the communication channel is an interface to the implementation class member that exposes the association between the XML element and the parsing function to the agent automatically.

25. The computer-accessible medium of Claim 17, wherein the event-based reader of XML source data is a SAX reader, and the instruction to process the event for the associated XML element includes an instruction to select from a plurality of events generated by the SAX reader only those events related to the associated XML element.

26. A method for parsing XML elements contained in an XML data source, the method comprising:

creating a map that associates custom parsing functions with XML elements;

registering an agent with a SAXReader to process events generated by the SAXReader for the mapped XML elements;

commencing the SAXReader to read XML elements contained in an XML data source;

pre-parsing the content of at least one of the mapped XML elements using a state machine automatically generated by the agent in accordance with the map;

sending the pre-parsed content of the XML element to the associated parsing function specified in the map; and

applying the parsing function to the content of the XML element.

27. The method of Claim 26, wherein the parsing function is a member of a user class library, and the map associates the function with the XML element by the class member's name.

28. The method of Claim 27, wherein sending the pre-parsed content of the XML element to the associated parsing function includes looking up the class member name, and invoking the class member with the pre-parsed content.

29. The method of Claim 26, wherein the custom parsing function is a reusable object with which the XML element has been previously associated, and creating the map includes joining the reusable object to the other parsing functions described in the map.

30. The method of Claim 26, wherein registering the agent includes establishing a communication channel through which the agent access the map, and further through which the agent sends the pre-parsed content of the XML element to the associated parsing function specified in the map.